

shall be those activities directly related to the blasting operation and the activities of surveying, stemming, sampling of geology, and reopening of holes, provided that reasonable care is exercised. Haulage activity is permitted near the base of a highwall being loaded or awaiting firing, provided no other haulage access exists.

(d) Loading and blasting shall be conducted in a manner designed to facilitate a continuous process, with the blast fired as soon as possible following the completion of loading. If blasting a loaded round may be delayed for more than 72 hours, the operator shall notify the appropriate MSHA district office.

(e) In electric blasting prior to connecting to the power source, and in nonelectric blasting prior to attaching an initiating device, all persons shall leave the blast area except persons in a blasting shelter or other location that protects them from concussion (shock wave), flying material, and gases.

(f) Before firing a blast—

(1) Ample warning shall be given to allow all persons to be evacuated;

(2) Clear exit routes shall be provided for persons firing the round; and

(3) All access routes to the blast area shall be guarded or barricaded to prevent the passage of persons or vehicles.

(g) Work shall not resume in the blast area until a post-blast examination addressing potential blast-related hazards has been conducted by a person with the ability and experience to perform the examination.

§ 56.6307 Drill stem loading.

Explosive material shall not be loaded into blastholes with drill stem equipment or other devices that could be extracted while containing explosive material. The use of loading hose, collar sleeves, or collar pipes is permitted.

§ 56.6308 Initiation systems.

Initiation systems shall be used in accordance with the manufacturer's instructions.

§ 56.6309 Fuel oil requirements for ANFO.

(a) Liquid hydrocarbon fuels with flash points lower than that of No. 2 diesel oil (125 °F) shall not be used to prepare ammonium nitrate-fuel oil, ex-

cept that diesel fuels with flash points no lower than 100 °F may be used at ambient air temperatures below 45 °F.

(b) Waste oil, including crankcase oil, shall not be used to prepare ammonium nitrate-fuel oil.

§ 56.6310 Misfire waiting period.

When a misfire is suspected, persons shall not enter the blast area—

(a) For 30 minutes if safety fuse and blasting caps are used; or

(b) For 15 minutes if any other type detonators are used.

§ 56.6311 Handling of misfires.

(a) Faces and muck piles shall be examined for misfires after each blasting operation.

(b) Only work necessary to remove a misfire and protect the safety of miners engaged in the removal shall be permitted in the affected area until the misfire is disposed of in a safe manner.

(c) When a misfire cannot be disposed of safely, each approach to the area affected by the misfire shall be posted with a warning sign at a conspicuous location to prohibit entry, and the condition shall be reported immediately to mine management.

(d) Misfires occurring during the shift shall be reported to mine management not later than the end of the shift.

§ 56.6312 Secondary blasting.

Secondary blasts fired at the same time in the same work area shall be initiated from one source.

ELECTRIC BLASTING

§ 56.6400 Compatibility of electric detonators.

All electric detonators to be fired in a round shall be from the same manufacturer and shall have similar electrical firing characteristics.

§ 56.6401 Shunting.

Except during testing—

(a) Electric detonators shall be kept shunted until connected to the blasting line or wired into a blasting round;

(b) Wired rounds shall be kept shunted until connected to the blasting line; and